

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2004/002136

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 F23G 5/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7 F23G 5/00, 5/027, 5/08, 5/10, 5/14, 5/16, 5/32, 5/44, 7/00; F23J 1/00, 1/02, 1/08

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Patents and applications for inventions since 1975

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and application for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 97/49641 A (SCIENCE APPLICATIONS INTERNATIONAL CO.) 31 December 1997 See pages 7-10; figures 1-4	1, 2, 5
Y	JP 11-287412 A (ISHIKAWAJIMA HARIMA HEAVY IND. CO., LTD.) 19 October 1999 See lines 12; 16; figures 1-3	1, 2, 5
Y	JP 03-055411 A (EBARA INFILCO CO., LTD.) 11 March 1991 See the abstract; figure 2	2
Y	JP 02-122109 A (KAWASAKI STEEL CO.) 9 May 1990 See the whole document	1, 2, 5
Y	JP 11-063463 A (ISHIKAWAJIMA HARIMA HEAVY IND. CO., LTD.) 5 March 1999 See the whole document	1, 2, 5
A	JP 10-103634 A (KOBE STEEL LTD.) 21 April 1998 See the whole document	1 - 5
A	JP 05-340524 A (KOBE STEEL LTD.) 21 December 1993 See the whole document	1 - 5

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

23 FEBRUARY 2005 (23.02.2005)

Date of mailing of the international search report

24 FEBRUARY 2005 (24.02.2005)

Name and mailing address of the ISA/KR



Korean Intellectual Property Office
920 Dunsan-dong, Seo-gu, Daejeon 302-701,
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

PARK, HYUN SOO

Telephone No. 82-42-481-8114



INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2004/002136

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 05-231624 A (HITACHI METALS LTD.) 7 September 1993 See the whole document	1 - 5
A	JP 12-035208 A (TAKUMA CO., LTD.) 2 February 2000 See the whole document	1 - 5
A	US 6,155,182 B (ANDREAS TSANGARIS) 5 December 2000 See the whole document	1 - 5
A	JP 06-307622 A (KOBE STEEL LTD.) 1 November 1994 See the whole document	1 - 5

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR2004/002136

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 97/49641 A	1997.12.31	JP 14-503328 A US 6,355,904 BA AU 4,643,497 A1 EP 906,249 B1 DE 69710721 C0 CA 2,257,544 AA	2002.01.29 2002.03.12 1998.01.14 2002.02.27 2002.04.04 1997.12.31
JP 11-287412 A	1999.10.19	NONE	
JP 03-055411 A	1991.03.11	NONE	
JP 02-122109 A	1990.05.09	NONE	
JP 11-063463 A	1999.03.05	NONE	
JP 10-103634 A	1998.04.21	NONE	
JP 05-340524 A	1993.12.21	NONE	
JP 05-231624 A	1993.09.07	NONE	
JP 12-035208 A	2000.02.02	NONE	
US 6,155,182 B	2000.12.05	NONE	
JP 06-307622 A	1994.11.01	NONE	